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PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) 30008-002001	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature_____ Typed or printed name _____	Application Number 10/765,461	Filed Jan. 26, 2004
	First Named Inventor Rehberg	
	Art Unit 2129	Examiner Hirl

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
    Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record. 43,349
Registration number

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

Signature

Jan Robin Rohlicek
Typed or printed name

617-500-2502
Telephone number

April 12, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Rehberg et al.   Art Unit   : 2129
Serial No. : 10/765,461   Examiner : Joseph P. Hirl
Filed   : January 26, 2004   Conf. No. : 8603
Title   : RULE SELECTION ENGINE

MAIL STOP APPEAL BRIEF — PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Pursuant to United States Patent and Trademark Office Pre-Appeal Brief Conference Program, a request for a review of identified matters on appeal is hereby submitted with the Notice of Appeal. Review of these identified matters by a panel of examiners is requested because the rejections of record are clearly not proper and are without basis, in view of a clear legal and/or factual deficiency in the rejections. All rights to address additional matters on appeal in any subsequent appeal brief are hereby reserved.

Claims 1-11 are presented for appeal, of which claims 1 and 8-11 are independent. Two issues are common to the rejections of these claims: rejection under 35 USC 102 over *Masiu* (US Pat. 5,179,632); and rejection under 35 USC 101 as being directed to non-statutory subject matter.

With regard to the rejection over *Masiu*, the Office Action effectively takes the position that claim 1 is anticipated by a brief description of a well-known algorithm known as the "Rete" algorithm. Even examining the detailed description of this algorithm that is incorporated by reference into *Masiu*, the rejection of claim 1 as anticipated is not proper.

Claim 1 requires in part

> processing the rules base to form a data structure in a computing system, *each rule being associated with a corresponding portion of the data structure, each corresponding portion* representing the condition for the rule and *including storage locations for holding values of the condition elements of the conditions* for said rule.

Applicant : Rehberg et al.   Attorney's Docket No.: 16887-002001
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Filed   : January 26, 2004
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The present Office Action takes the position that the recited "corresponding portion of the data structure" that represents a condition of a rule is the Rete network referred to in *Masui* (or apparently a corresponding portion of the network) through which information is processed. The Office Action further takes the position that nodes of the network in *Masui* hold values of a rule's condition elements by virtue of condition clauses being stored in each node. The Applicant disagrees with these positions.

The Rete Algorithm

The Office Action relies on a portion of the Background of *Masui* (col.1, lines 24-54), which relates to the well-known "Rete" algorithm as the basis for anticipation of claim 1. This portion of *Masui* reads in part:

> A known method ... is described in "Rete: A Fast Algorithm ..." ... incorporated herein by reference.
> According to the above method, satisfied conditions are determined ... using a network into which conditions have been transformed ... .
> ... The current data are supplied to the network to check if the data satisfy the condition clauses stored in each node. If satisfied, the data are supplied to the next node, whereas if not, the process is terminated. The above processes are repeated. If the process reaches the terminal node, it is judged that the condition indicated by the condition name (rule name) described in the terminal node has been satisfied. This method is advantageous in its fast processing.
> ...   (col. 1, lines 9-37)

The present application also describes the "Rete" algorithm as follows:

> [06]   ... The Rete algorithm uses a data flow network to represent the conditions of the rules. The network has two parts, one part performs the tests required to evaluate the individual condition elements, and a second part combines the condition elements to form the overall conditions for the rules. The outputs of the first part (and the input to the second part) are a set of memories each associated with a different condition element for holding the set of facts that satisfy (or may satisfy for some values of the variables) that condition element. The second part includes storage elements associated with different combinations of condition elements, **each identifying the possible corresponding combinations of facts that satisfy that combination of condition elements. Some of these storage elements are associated with**

> overall conditions that particular rule must satisfy, and the
> presence of any combination of facts in these storage elements
> indicate that the corresponding rules are applicable given those
> facts.   (emphasis added)

Turning to the Rete paper ("Rete: A Fast Algorithm for the Many Pattern/Many Object
Pattern Match Problem"), which is incorporated into *Masui* by reference (col. 1, lines 13-16), we
see that the content of the network is specified as follows:

> The algorithm that will be presented here, the Rete Match
> Algorithm, can be described as an indexing scheme that does not
> require the interpretive step. The indexing function is represented
> as a network of simple feature recognizers. This representation is
> related to the graph representations for so-called structured
> patterns. (p. 21)
>
> ***
>
> A pattern matcher can avoid iterating over the elements in
> working memory by storing information between cycles. The step
> that can require iteration is determining whether a given pattern
> matches any of the working memory elements. The simplest
> interpreters determine this by comparing the pattern to the
> elements one by one. The iteration can be avoided by **storing, with
> each pattern, a list of the elements that it matches**. The lists are
> updated when working memory changes. **When an element
> enters working memory, the interpreter finds all the patterns
> that match it and adds it to their lists.** When an element leaves
> working memory, the interpreter again finds all the patterns that
> match it and deletes it from their lists. (p. 21-22, emphasis added)
>
> ***
>
> 2.2.3. Saving information in the network
> As explained above, the black box must maintain state
> information because it must know what is in working memory. In
> simple Rete networks all such state is stored by the two-input
> nodes. **Each two-input node contains two lists called its left and
> right memories. The left memory holds copies of the tokens
> that arrived at its left input, and the right memory holds copies
> of the tokens that arrived at its right input. The tokens are
> stored as long as they are useful.** The next section explains how
> the nodes determine when the tokens are no longer useful. (p. 25,
> emphasis added)

It is therefore clear from these descriptions of the Rete algorithm that there are indeed
nodes in a network, and that some of the nodes each correspond to a different condition element

and other nodes each correspond to a different rule. However, it is also clear that what is stored
at the nodes are "tokens", which are also known as "work elements" or "facts." But the "value of
the condition element" (for example, true or false) is not stored at the node.

The Rete algorithm in not within the scope of claim 1

Turning again to the language of claim 1, and the Office Action's apparent position that
the recited "corresponding portion [of the data structure with which each rule is associate]"
matches a portion of the Rete network that includes a rule's node and the nodes for the condition
elements of the rule, then the recited "storage locations for holding values of the condition
elements of the conditions for said rule" would have to be found at these nodes. But they are
not. A condition element node in Rete has tokens (or combinations of tokens) that match the
condition element. On the other hand, the specification of the present application makes clear
that the "value of a condition element" is an indicator of whether the condition element is
matched. For example, "[a] condition element is evaluated to be true for a fact if that fact
includes attribute/value pairs that together determine that the overall logical function is true,"
that is, the condition element evaluates to a value that is true or false. There is no storage in the
Masui network for such values.

The Applicant therefore emphatically disagrees that the Rete algorithm referred to by
Masui in its background, or the variants of that algorithm described elsewhere in *Masui*, disclose
or suggest the form of data structure recited in claim 1.

The Final Office Action has maintained its rejection of the claims as being directed to
non-statutory subject matter. The Action states "claims 1-11 are broad in concept. Specifically,
in claims 1-11, the concept of rules applies to the entire domain or rules and thereby preempts
the abstraction of rules."

This statement appears to utterly ignore the limitations recited in claims. For example, it
is very clear as argued above that claim 1 does not include in its scope the previously known
Rete algorithm. There is nothing abstract or intangible about the limitations of the claim –
"processing the rules base to form a data structure in a computing system, each rule being
associated with a corresponding portion of the data structure, each corresponding portion
representing the condition for the rule and including storage locations for holding values of the

condition elements of the conditions for said rule." This step is tangible in its arrangement of the data structure in a computing system. Furthermore the claimed subject matter is useful as a basis for efficient processing of the rules.

In response to the Applicant's argument in response to the prior rejection under 35 USC 101, the Office Action states "claim set 1-11 attempts to patent 'every substantial application' regarding rule processing." If this is meant to state that automated rules processing systems are not patentable outside the context of a domain of rules being processed, then the Applicant most emphatically disagrees. By the same rational, instruction processing systems (e.g., computer processors) would not be patentable outside the context of a domain of instructions (e.g., programs) executed on the processing system.

The claims are not directed to abstract ideas and do not preempt the abstraction of rules. The claims meet all the requirements of 35 USC 101.

The remaining claims are allowable for at least the reasons set forth above for claim 1.

Respectfully submitted,
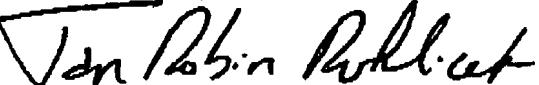
Date: _April 12, 2007_   J. Robin Rohlicek, J.D., Ph.D.
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